CLAIMS

1. A method for making an anisotropic conductive film with conductive inserts, the method comprising the etching of at least one pattern (C1, K1) in a single crystal substrate (15) in order to form at least one cell (22, 26) with a bottom for drawing the contour of a first end of an insert (23, 27), characterized in that the drawing of the pattern is intended for having at least one protruding tip and at least one recessed area appear in the bottom of the cell, during the etching of the pattern along at least one crystallographic plane of the substrate with limiting crystallographic planes.

2. The method according to claim 1, characterized in that the crystallographic plane along which the pattern is etched, is the (100) plane and the limiting crystallographic planes are the (111) and (110) planes.

3. The method according to claim 1 or 2, characterized in that a pattern is formed with a set of elementary patterns separated from each other and positioned relatively to each other so that, during the etching, the elementary patterns join, causing an area including limiting (111) and (110) planes and non-limiting planes to appear between the patterns.

4. The method according to claim 3, characterized in that the elementary patterns are circles.

5. The method according to claim 3, characterized in that the elementary patterns are squares.

6. The method according to claim 5, characterized in that the squares are grouped parallel to each other so as to be inscribed in a square geometry, the sides of the squares not being orientated along the <110> direction of the substrate;

7. The method according to claim 5, characterized in that the squares are grouped parallel to each other according to a cross-shaped geometry, each square having two sides parallel to the <110> direction of the substrate, an overetching area (S1, S2, S3, S4) surrounding the periphery of each square.

8. The method according to claim 1 or 2, characterized in that the pattern is formed with at least a truncated square, two parallel sides of the square being parallel to the <110> direction of the substrate.

9. The method according to any of the preceding claims, characterized in that it comprises the deposition of a sacrificial layer (20) onto the substrate, the sacrificial layer conforming to the profile of the cell.

10. The method according to claim 9, characterized in that it comprises the deposition of a polymer layer (21) onto the sacrificial layer (20) and in that the polymer layer is etched in order to form

circular holes (22) in the extension of the tips formed in the cell.

11. The method according to claim 10, characterized in that an insert is formed in a cell, from the bottom of the cell up to the level of an upper face of the polymer layer.

12. The method according to claim 11, characterized in that the sacrificial layer is etched in order to obtain detachment of the polymer layer.

13. The method according to claim 9, characterized in that a photoresist is insolated through a mask for forming holes (26) in the extension of tips (25) formed in the substrate.

14. The method according to claim 13, characterized in that an insert is formed in a hole formed in the photoresist.

15. The method according to claim 14, characterized in that the resin is removed by dissolving it in a solvent.

16. The method according to claim 15, characterized in that an insulating film is deposited on the sacrificial layer (20) and on the inserts (27).

17. The method according to claim 16, characterized in that plasma etching of the insulating film causes the tips of the inserts to protrude.

18. The method according to claim 17, characterized in that the insulating film provided with the inserts is detached from the sacrificial layer.

19. The method according to any of claims 11, 12, 14, 15, 16, 17, 18, characterized in that the inserts are formed by electrolytic growth, by evaporation or spraying.

20. The method according to any of claims 11, 12, 14, 15, 16, 17, 18, 19, characterized in that the insert formed from the cell, has at the end opposite to its first end, at least one protruding tip and at least one recessed area, the protruding tip and the recessed area facing a recessed area and a protruding tip of the first end of the insert, respectively.

21. The method according to claim 20, characterized in that the insert formed from the cell has, at its first end, a protruding tip and at least two recessed areas.

22. The method according to claim 20, characterized in that the insert formed from the cell has, at its first end, a recessed area and at least two protruding tips.

23. The method according to any of the preceding claims, characterized in that the inserts are in nickel or copper.

24. The method according to any of the preceding claims, characterized in that the substrate is in

silicone or silicon carbide.

25. The method according to any of the preceding claims, characterized in that it comprises a further etching step for increasing the tip height of the insert.